Abstract

Breast cancer is one of the most common cancers among women of the developing countries in the world, and it has also become a major cause of death [1, 2]. Treatment of breast cancer is
effective only if it is detected at an early stage. X-ray Mammography is the most effective technique used by radiologists in the screening and diagnosis of breast cancer in women but the mammographic images are complex [2]. With the development in Artificial Intelligence (AI) and Soft Computing Techniques, Computer-Aided Diagnosis (CAD) attracts more and more attention for brain tumor diagnosis. Computer-Aided Diagnosis system (CAD) can be very helpful in detecting and diagnosing breast abnormalities earlier and faster than typical screening programs. This paper presents retrieval and ANN (Artificial neural network) based classification system for computer aided diagnosis of breast cancer using texture features. The proposed system uses Euclidean distance for the comparison of the feature vector of the query image and each image in the database. It has been found that the proposed CBIR system is gives 80% retrieval accuracy for the database of 200 images of mini-MIAS database. Further the ANN based classifier gives 94% accuracy in classifying benign and malignant breast masses. MATLAB ® 7.01 image processing toolbox and ANN toolbox have been used to implement the algorithm. The results show that texture features can be effectively used for classifying mammographic images with high level of accuracy.

References


Index Terms

Computer Science Pattern Recognition

Keywords

Mammograms image processing
shape and texture features

Content Bases Image Retrieval (CBIR)

ANN (Artificial Neural Network)